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EXAMINER

ELALLAM, AHMED

ART UNIT	PAPER NUMBER
2662	6

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/672,782

Applicant(s)

JUNG ET AL.

Examiner

AHMED ELALLAM

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 10 and 15 are objected to because of the following informalities:

In claims 10 and 15, it is referred to the message as comprising an HDCL "and" an Ethernet frame. The "and" should be changed to "or". Also the term "HDCL" should be changed to "HDLC".

Appropriate correction is required.

Specification

2. The disclosure is objected to because of the following informalities:

The specification is replete with typographical errors.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6, 8-10, and 11-15, 18, 20-27 and 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements from the claims are: The duplex exchange operation is performed in response to a power fail signal.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 11, 14 and 15 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted prior art, Figures 2 and 3, specification pages 1-5.

Regarding claim 11, with respect to figure 2 and 3, the prior art discloses a control method for relay node duplexing, comprising:

A node A 230A transmitting a signal (NODE-Fail) representing that the node cannot be operated anymore, see page 2, lines 17-21, (claimed generating an exchange start signal for at least one of an active node and a standby node when a duplex exchange is to be performed);

Transmitting a signal (NODE-ACT) informing that the node (standby) has an active right to its opposite node, see page 2, lines 17-21. (Claimed generating an exchange complete signal), wherein the inactive node A 230A stops the message relay function by disabling the node control unit 233, see page 5, lines 19-20, (claimed setting the active node to an inactive state)

Before transmitting the (NODE-ACT) signal, it needs to be prepared, (claimed performing preparation for exchange between the active node and the standby node, when the exchange start signal is generated);

The node B 230B translated into the active start after receiving the active right signal. See page 5, lines 19-20. (Claimed activating the standby node when the exchange complete signal is received by the standby node).

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Regarding claim 14, the standby becomes active after receiving the active right signal. (Examiner interpreted the activation of the standby node as the claimed standby node having received the exchange complete signal becomes active by activating a message transmission/receiving function for thereby completing the exchange, because for the standby node to become active the transmitter and receiver of the standby must be active as well).

Regarding claim 15, the Admitted prior art discloses that the message comprises a HDCL frame. See specification, page 1, lines 10-15.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 18-22, 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, specification, pages 2-5 in view of Takase, US (5,283,782).

Regarding claims 1 and 3, the prior art discloses a control apparatus for relay node duplexing, in which a duplexing control unit (figure 3, unit 234) that applies enable signals for data transmission from the active node buffer, see specification page 5, lines 3-24. The prior art also discloses that when the active node becomes inoperable, a duplex exchange for translating the standby node

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into an active node, (spec, page 5, lines 11-13), in addition, an active right signal is transferred to the standby node when a duplex exchange operation is complete, (spec page 5, lines 14-18).

The prior art does not disclose that the duplexing control unit maintains a message transmission function and disables a message receiving function of the active node and activates a message receiving function of a standby node during a duplex exchange operation.

However, with reference to figure 1, Takase discloses a cell transfer circuit 3a (primary system) and a cell transfer circuit (standby system) for data duplex exchange in which cell stored in the buffer of standby system are subject to transmission while inhibiting receiving cells, see column 3, lines 1-6, and column 4, lines 51-57. (Examiner interpreted the inhibition of receiving as the claimed "disable a message receiving function" and the transmission of the cell stored in the buffer as the claimed "maintains a message transmission function"). Takase further discloses that the standby system (system 1) only receives cells into its buffer, see column 5, lines 39-41. (Examiner interpreted the receiving of cells by the standby system as the claimed "activates a message receiving function of the standby node").

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to enable the duplexing control unit of the prior art for providing the duplex switching taught by Takase so to prevent the loss of data during the exchange. See column 6, lines 24-37. A person would be motivated to do so by recognizing the advantage of having loss-less data

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transmission taught by Takase. The advantage would be providing a reliable data exchange (relay) for use in sensitive data transmission.

Regarding claim 18, the prior art discloses a control apparatus for relay node duplexing, in which a duplexing control unit (figure 3, unit 234) applies enable signals for data transmission from the active node buffer, see specification page 5, lines 3-24. The prior art also discloses that when the active node becomes inoperable due to power fail signal, a duplex exchange for translating the standby node into an active node, (spec, page 5, lines 11-13). (Examiner interpreted the power fail signal of prior art initiating the duplex exchange as being the claimed detection unit, which detects a status signal, because for the power fail signal to be generated, it requires some form of detection element).

Transmitting an active right signal to the standby node, (spec page 5, lines 14-18). (Claimed activating a message receiving function of a standby node during a duplex exchange operation);

The prior art does not disclose that the duplexing control unit maintains a message transmission function and disables a message receiving function of the active node and activates a message receiving function of a standby node during a duplex exchange operation.

However, with reference to figure 1, Takase discloses a cell transfer circuit for data duplexing in which cell stored in a buffer are subject to transmission while inhibiting receiving cells, see column 3, lines 1-6, and column 4, lines 51-57. (Examiner interpreted the inhibition of receiving as the claimed "disable a

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message receiving function" and the transmission of the cell stored in the buffer as the claimed "maintains a message transmission function").

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to enable the duplexing control unit of the prior art to implement the buffer-emptying method taught by Takase so to prevent the loss of data during the data relay duplexing in case the node fails. A person would be motivated to do so by recognizing the advantage of having loss-less data transmission taught by Takase in emptying the buffer. The advantage would be providing a reliable data exchange (relay) for use in sensitive data transmission.

Regarding claim 19, the prior art discloses that the duplex exchange operation is initiated due to power failure of the active node., see specification, lines 17-21. (Claimed status signal indicates occurrence of a power failure of the active node)

Regarding claim 20, the prior art does not disclose message buffer of the active node is emptied during a period when the message transmission function is maintained.

However, in addition to the above with reference to claim 18, Takase further discloses that cell in the buffer are subject to transmission only, the cell stored decrease with the lapse of time. See column 4, lines 51-57. (Claimed message buffer of the active node is emptied during a period when the message transmission function is maintained)

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Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to implement the buffering method of maintaining transmission only till the buffer is emptied as taught by Takase in the active node of prior art so to maintain data integrity transmission upon the node failure. A person of skill would do so because by inhibiting the receiving cells while maintaining transmission of already stored cell would give the prior art system enough time to switch over to the standby node in loss-less fashion for data relaying.

Regarding claims 21 and 22, prior-art/Takase does not disclose transmitting all the messages in the buffer to a second buffer at the standby node. However, it would have been obvious to an ordinary person of skill in the art to provide the standby node with a buffer to receive messages from the failed active node. A person of skill in the art would be forced to think of having a buffer in the standby node as a result of implementing the buffering apparatus of Takase in the active node, the reasons lie in the symmetrical nature of active/standby nodes. This symmetry is the motive of having a skilled partisan implementing hardware/or software in an identical manner in both active and standby nodes, since each node must provide the same functions in case the other fails. The advantage would be a loss-less data transition from active node to standby node upon a failure in the active node of the prior art.

Regarding claim 26, the prior art discloses a control method for relay node duplexing, in which a duplexing control unit (figure 3, unit 234) applies enable signals for data transmission from the active node buffer, see specification page

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5, lines 3-24. The prior art also discloses that when the active node becomes inoperable due to power fail signal, a duplex exchange for translating the standby node into an active node, (spec, page 5, lines 11-13). (Examiner interpreted the power fail signal of prior art as the claimed initiating a duplex exchange operation between active and standby nodes);

Transmitting an active right signal to the standby node, (spec page 5, lines 14-18). (Claimed sending an active right signal to the standby node);

The prior art does not disclose disabling a message receiving function and maintaining a message transmission function of the active node, and emptying at least one message buffer of the active node, wherein the active right signal is sent to the standby node after the buffer is empty.

However, with reference to figure 1, Takase discloses a method in which cell stored in a buffer are subject to transmission while inhibiting receiving cells, see column 3, lines 1-6, and column 4, lines 51-57. (Examiner interpreted the inhibition of receiving as the claimed "disabling a message receiving function" and the transmission of the cell stored in the buffer as the claimed "maintaining a message transmission function").

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to enable the duplexing control unit of the prior art to implement the buffer-emptying method taught by Takase so to prevent the loss of data during the data relay duplexing in case the active node of prior art fails. A person would be motivated to do so by recognizing the advantage of having loss-less data transmission taught by Takase in emptying the buffer. The

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advantage would be providing a reliable data exchange (relay) for use in sensitive data transmission. A person of skill in the art would be further motivated to send the active right signal of prior art after emptying the buffer so that the standby node is activated after receiving all the data in the failed node. A person would do so in recognizing a loss-less data exchange in case of a node failure.

Regarding claims 27 and 28, the prior art discloses that the duplex exchange operation is initiated due to a power failure of the active node, see specification, lines 17-21.

Regarding claims 29 and 30, prior-art/Takase does not disclose transmitting all the messages in the buffer to a second buffer at the standby node. However, it would have been obvious to an ordinary person of skill in the art to provide the standby node with a buffer to receive messages from the failed active node. A person of skill in the art would be forced to think of having a buffer in the standby node as a result of implementing the buffering apparatus of Takase in the active node, the reasons lie in the symmetrical nature of active/standby nodes. This symmetry is the motive of having a skilled partisan implementing hardware/or software in an identical manner in both active and standby nodes, since each node must provide the same functions in case the other fails. The advantage would be a loss-less data transition from active node to standby node upon a failure in the active node of the prior art.

Regarding claim 31, the prior art discloses translating the standby node into an active node, (spec, page 5, lines 11-13), (claimed activating a message

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receiving function of the standby node). The prior art does not disclose transmitting one message stored in the buffer to the standby node.

However, it would have been obvious to an ordinary person of skill in the art to transmit the message stored in the buffer implemented by Takase to the standby node since the active node can no longer relay the stored message to its destination. A person of skill in the art would do so to provide a loss-less data transmission upon a node failure by activating the standby node while preserving the data integrity using the buffering method of Takase between the transitional phases of handing over traffic to the standby node. The advantage would be a loss-less data of the prior art exchange duplexing apparatus.

7. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art in view of Allison, III et al, US (4,912,552).

Regarding claim 16, The admitted prior art disclose substantially all the limitations of base claim 16, and addition it also discloses a power signal initiating the duplex exchange, see specification, lines 17-21.

Prior art does not disclose the active node is supplied with a stable power for a predetermined time after a power down.

However, Allison discloses enabling a battery backup when a power fails. See column 16, lines 3-9. (Examiner interpreted the enablement of the backup battery in the power failure as the claimed supplied a stable power for a predetermined time after power down).

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Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to provide the system of prior art with the backup power supply of Allison so that in case of power failure, an automatic power can be administered resulting in a temporary functioning of the duplex exchange of prior-art system. The advantage would be the prevention of data loss due to the main power supply failure of prior-art system.

Regarding claim 17, Prior-art/Allison do not disclose that the backup power supply last for a predetermined time, wherein the predetermined time is longer than a time period between the power down and the generation of a duplex exchange complete signal". Examiner interpreted the claimed limitation as being equivalent to "maintaining the backup power supply for a buffer at the failed node to be emptied".

It would have been obvious to an ordinary person of skill in the art, at the time the invention was made to give the backup power enough time so that data in the buffer of the failed node can be transmitted in its entirety. A person of skill in the art would be motivated to do so for having loss-less data delivery upon the active node failure.

8. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Takase as applied to claim 1 above, and further in view of Allison, III et al, US (4,912,552).

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Regarding claim 7, the prior art in view of Takase discloses substantially all the limitation of claim 1, also the prior art discloses a power signal initiating the duplex exchange, see specification, lines 17-21.

Prior art/Takase does not disclose the active node is supplied with a stable voltage for a predetermined time by a power supply even after the occurrence of power down.

However, Allison discloses enabling a battery backup when a power fails. See column 16, lines 3-9. (Examiner interpreted the enablement of the backup battery in the power failure as the claimed supplied a stable voltage for a predetermined time by a power supply even after the occurrence of power down).

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to provide the system of prior art/Takase with the backup power supply of Allison so that in case of power failure an automatic power can be administered resulting in a temporary functioning of the duplex exchange of prior-art/Takase's system. The advantage would be the prevention of data loss due to the main power supply failure of prior-art/Takase's system.

Regarding claims 8 and 9, Prior-art/Takase/Allison do not disclose having a backup power supply for a predetermined time, wherein the predetermined time is longer than a time period between the power down and the generation of a duplex exchange complete signal". Examiner interpreted the claimed limitation as being equivalent to "maintaining the backup power supply for the buffer to be emptied".

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It would have been obvious to an ordinary person of skill in the art, at the time the invention was made to give the backup power enough time so that data in the buffer of the faulted node can be transmitted in its entirety. A person of skill in the art would be motivated to do so for having loss-less data delivery upon the active node failure.

Regarding claim 10, the Admitted prior art discloses that the message comprises a HDCL frame. See specification, page 1, lines 10-15.

Allowable Subject Matter

9. Claims 2, 4-6, 12, 13 and 23-25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Smith, US 2004/0117687 A1; Murono et al, US (5,793,769); Imai et al, US 5,802,298; Byers et al, US (5,828,823); Richardson, US (5,479,608); Loftis et al, US (5,185,693).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (703) 308-6069. The examiner can normally be reached on 9-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (703) 305-4744. The

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fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM
Examiner
Art Unit 2662
8/16/2004



JOHN PEZZLO
PRIMARY EXAMINER